

## SPECIFICATION

### STORAGE DEVICE MOUNTING APPARATUS

#### BACKGROUND OF THE INVENTION

##### 1. FIELD OF THE INVENTION

[0001] The present invention relates to storage device mounting apparatuses for securing items such as data storage devices, and more particularly to a storage device mounting apparatus which conveniently and readily mounts a storage device.

##### 2. RELATED ART

[0002] A typical personal computer invariably comprises one or more data storage devices for communication and handling of data. Such data storage devices include, but are not limited to, hard disk drives, floppy disk drives, and CD-ROM drives. These data storage devices usually comprises a rigid casing that is retained in a computer enclosure by means of bolts or rivets or catches.

[0003] Taiwan Patent Application No. 89209805 discloses a data storage device mounting means which utilizes couples of screws and locating means for securing a data storage device in an enclosure. The enclosure comprises a bottom plate and a side plate. The side plate forms a plurality of locating catches extending from an inner side thereof. The bottom plate comprises a pair of slots and a pair of upright tabs. The storage device defines a plurality of locating apertures in both side thereof. A board is attached to an outside surface of the storage device. The board extrudes a pair of outward bars form a bottom edge and a plurality of inward locating catches from an inner side thereof. In assembly, the storage device is inserted into the enclosure along the side plate. When the storage device reaches the upright tabs, the locating catches of the enclosure engages in the apertures of the storage device, the locating bars of the board pivotally engaging in

the slot of the bottom plate. A screw is then extended through the board to engage with the storage device. However, all the mounting or dismounting operation must be completed in the enclosure. It is apt to damage some components in the enclosure.

[0004] An improved data storage device mounting means which overcomes these problems is desired.

#### **SUMMARY OF THE INVENTION**

[0005] Accordingly, a main object of the present invention is to provide a mounting apparatus for safely and effectively mounting and retaining a data storage device.

[0006] To achieve the above object, a storage device mounting apparatus of the present invention includes a first slider having a catch, a second slider having a cutout, a bracket and a fastener. The bracket defines an opening in a front plate thereof. The bracket forms a guideway having an aperture, a rail and a stop from a bottom plate thereof corresponding to the opening. In assembly, the sliders are attached to opposite side of a storage device. The storage device is inserted into the bracket through the opening, the first slider sliding along the guideway and the second slider sliding the rail. The catch of the first slider engages in the aperture of the guideway, the cutout of the second slider engagingly receives the stop and the fastener secures the first slider to the guideway.

[0007] Other objects, advantages and novel features of the present invention will be drawn from the following detailed description of preferred embodiments of the present invention with the attached drawings, in which:

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0008] Fig. 1 is an exploded, isometric view of a storage device mounting apparatus in accordance with the present invention, together with a data storage

device;

[0009] Fig. 2 is an enlarged, isometric view of a first slider of the storage device mounting apparatus of Fig. 1, but showing the slider inverted;

[0010] Fig. 3 is an enlarged, isometric view of a second slider of the storage device mounting apparatus of Fig. 1, but viewed from another aspect;

[0011] Fig. 4 is an enlarged, isometric view of a bracket of the storage device mounting apparatus of Fig. 1, but viewed from another aspect;

[0012] Fig. 5 is a partially assembled view of Fig. 1, not including the bracket; and

[0013] Fig. 6 is a fully assembled view of Fig. 1.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] Referring to Fig. 1, a storage device mounting apparatus in accordance with the present invention comprises a first slider 20, a second slider 30, a bracket 40 and a fastener 50.

[0015] The storage device mounting apparatus is for mounting a data storage device 10 therein. The storage device 10 defines a pair of threaded holes (not shown) in each of opposite side walls thereof, and said storage device 10 defines a cutout 101 around one corner thereof.

[0016] Referring also to Fig. 2, the first slider 20 comprises a first main body 22. An L-shaped slant catch 26 depends from the first main body 22. A through hole 25 is defined in one end of the first main body 22. A vertical strip 23 depends from a longitudinal inner side edge of the first main body 22. The vertical strip 23 defines a pair of first fixing holes 24 therein. A horizontal strip 29 is bent inwardly from an opposite longitudinal outer side edge portion of the first main body 22, such that the horizontal strip 29 is doubled over and abuts a lower surface

of the first main body 22.

[0017] Referring also to Fig. 3, the second slider 30 comprises a second main body 32. The second main body 32 defines a cutout 35 in one end thereof. A second vertical strip 33 extends upwardly from a longitudinal inner side edge of the second main body 32. A pair of second fixing holes 34 is defined in the vertical strip 33. A second horizontal strip 39 is bent inwardly from an opposite longitudinal outer side edge portion of the second main body 32, such that the second horizontal strip 39 is doubled over and abuts an upper surface of the second main body 32.

[0018] Referring also to Fig. 4, the bracket 40 comprises a front plate 41 and a bottom plate 44. The front plate 41 forms a horizontal flange 43 extending inwardly from a top edge thereof. An opening 42 is defined in the front plate 41, for access of the storage device 10 therethrough. The bottom plate 44 forms a raised guideway 45, and a rail 46 parallel to and opposite from the guideway 45. The guideway 45 and the rail 46 correspond to opposite sides of the opening 42 respectively. The guideway 45 defines an aperture 47 in an end thereof nearest the front plate 41, and a securing hole 48 in an opposite end thereof most distal from the front plate 41. A stop 49 extends upwardly from the bottom plate 44, in general alignment with the rail 46 and opposite from the guideway 45.

[0019] Referring to Figs. 5 and 6, in assembly, the first and second sliders 20, 30 are attached to the storage device 10. Two fasteners such as screws 11 are extended through the first fixing holes 24 of the first vertical strip 23 and engaged in the thread holes of the corresponding side wall of the storage device 10. Another two fasteners such as screws 11 are extended through the second fixing holes 34 of the second vertical strip 33 and engaged in the thread holes of the corresponding side wall of the storage device 10. The combined storage device 10 and first and second sliders 20, 30 is inserted into the bracket 40 through the opening 42, with the first horizontal strip 29 of the first slider 20 sliding along the

guideway 45 and the second horizontal strip 39 of the second slider 30 sliding along the rail 46. The storage device 10 is located to an inmost position in the bracket 40, with the catch 26 of the first slider 20 engaging in the aperture 47 of the guideway 45, and the cutout 35 of the second slider 30 engagingly receiving the stop 49 of the bottom plate 44. A fastener such as a thumbscrew 50 is extended through the through hole 25 of the first slider 20 to engage in the securing hole 48 of the bracket 40 wherein an operation head of the thumbscrew 50 is substantially located in the cutout 101 and vertically exposed to the exterior through said cutout 101.

[0020] It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.